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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/611,182 07/06/00 KOZLOV

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EXAMINER

IM52/0621

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ART UNIT

PAPER NUMBER

1762

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06/21/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/611,182

Applicant(s)

KOZLOV ET AL.

Examiner

Michael Barr

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23, 25 and 26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7, 9-23, 25 and 26 is/are rejected.
- 7) ☒ Claim(s) 5, 6 and 8 is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 18) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

DETAILED ACTION

Response to Arguments

1. Applicant's arguments and amendments, filed 6/12/01, have been fully considered and reviewed by the examiner. In light of the amendments, the objections and rejections to the claims under 35 USC 102 and 112 have been withdrawn by the examiner. The examiner acknowledges the cancellation of Claim 24. Claims 1-23 and 25-26 are pending.

The applicant argues that the platinum salts of Rhoda et al. are not within the scope of the claims and that there is not motivation to combine with the Chang reference. The examiner admits that Rhoda et al. does not teach the claimed platinum salts (i.e. platinum nitrite or ammine-nitrite salt) and has applied the Chang reference to meet the deficiency. Chang et al. teaches an electroless platinum plating solution utilizing ammonium hydroxide and hydrazine hydrate, where the platinum salt is platinum diammine dinitrite (Claim 9). The platinum diammine dinitrite of Chang et al. meets the platinum salt limitations of the applicant's Claims 1-2 and 4. One of ordinary skill in the art would have recognized, from review of Chang et al., that platinum diammine dinitrite is a known and conventional platinum salt for use in electroless plating baths utilizing ammonium hydroxide and hydrazine hydrate. It would have been obvious to one skilled in the art to use a conventional platinum salt in the process and solution of Rhoda et al., which is conventionally used in electroless solutions containing hydrazine hydrate and ammonium hydroxide, with the expectation of providing the desired electroless plating results. Therefore, it would have been obvious to one skilled in the art to use the platinum diammine dinitrite of Chang et al., as the platinum salt material in Rhoda et al., with the expectation of

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providing the desired electroless plating results, since it is shown by Chang et al. that platinum diammine dinitrite is a known platinum salt for use in electroless plating solutions containing ammonium hydroxide and hydrazine hydrate. One of ordinary skill in the art would have found it expected that such a platinum salt would have been reduced by the plating bath materials of Rhoda et al. and thus produce the desired platinum metal for the Pt-Rh alloy layer. If the applicant can provide a factual showing of unexpected results using the claimed platinum salt material, over other conventional platinum salts, then the examiner would withdraw the rejection.

The applicant has argued that the cited Japanese reference to Torikai does not meet the claimed material of Claim 3. The examiner respectfully disagrees. The Torikai material meets the claimed material formula of Claim 3 if $x=6$, $y=3$, and $z=0$, which are all possible in the claimed formula. The applicant further argues that there would have been no motivation to combine the Torikai reference with Rhoda and Chang. The examiner again respectfully disagrees. The Torikai reference is merely applied by the examiner to show a conventional rhodium salt used in electroless plating. One of ordinary skill in the art would have recognized, from review of Torikai, that such a rhodium salt, meeting the formula of Claim 3, is a known and conventional rhodium salt for use in electroless plating baths utilizing ammonium hydroxide and hydrazine hydrate. It would have been obvious to one skilled in the art to use a conventional rhodium salt in the process and solution of Rhoda et al. and Chang et al., which is conventionally used in electroless solutions containing hydrazine hydrate and ammonium hydroxide, with the expectation of providing the desired electroless plating results. Therefore, it would have been obvious to one skilled in the art to use the rhodium salt of Torikai, as the rhodium salt material in

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Rhoda et al. and Chang et al., with the expectation of providing the desired electroless plating results, since it is shown by Torikai that the rhodium salt is a known rhodium salt for use in electroless plating solutions containing ammonium hydroxide and hydrazine hydrate. One of ordinary skill in the art would have found it expected that such a rhodium salt would have been reduced by the plating bath materials of Rhoda et al. and Chang et al. and thus produce the desired rhodium metal for the Pt-Rh alloy layer. If the applicant can provide a factual showing of unexpected results using the claimed rhodium salt material, over other conventional rhodium salts, then the examiner would withdraw the rejection.

The applicant has argued against the Ishihara reference stating that it is not directed to electroless plating. However, the examiner is merely applying the Ishihara reference to show the conventionality of applying a platinum-rhodium alloy plating over a semiconductor substrate. The substrate described by Ishihara meets the limitations of Claim 22. Although Ishihara may not teach applying the Pt-Rh layer by electroless plating, electroless plating of semiconductor material is a well-known and used technique for forming metal layers on semiconductors. One of ordinary skill in the art would have found it obvious to use a substrate, such as that of Ishihara et al. to be platinum-rhodium alloy plated by the plating solution of Rhoda et al. and Chang et al., with the expectation of providing the desired plating results, since it is shown by Ishihara et al. that such a substrate is conventionally plated with platinum-rhodium alloy.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the

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time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 26 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 26 cites limitations to an article comprising a substrate immersed in an aqueous solution composition. Such recitation renders the claim vague and indefinite as the metes and bounds of the claim are not clearly defined. It is not clear as to when during the immersion that the article is being claimed. The article at a point immediately after immersion is not the same as one that has been immersed in the solution for a longer amount of time, as the substrate would be plated with Pt-Rh alloy and the solution components would be depleted. The applicant is claiming an infinite number of intermediate products, each having a different degree of plating and solution composition. Therefore, the metes and bounds of such an article claim are not clearly defined.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-2, 4, 7, 9-21, 23, and 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rhoda et al. in view of Chang et al.

Rhoda et al. and Chang et al. are applied here for the same reasons as given above and in paragraph 7 of the previous office action.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rhoda et al. and Chang et al. as applied to claim 1 above, and further in view of JP 58204168 by Torikai et al. ("Torikai").

Rhoda et al., Chang et al., and Torikai are applied here for the same reasons as given above and in paragraph 8 of the previous office action.

7. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rhoda et al. and Chang et al. as applied to claim 11 above, and further in view of Ishihara et al.

Rhoda et al., Chang et al., and Ishihara et al. are applied here for the same reasons as given above and in paragraph 9 of the previous office action

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Allowable Subject Matter

8. Claims 5-6 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Barr whose telephone number is 703-305-7919. The examiner can normally be reached on Monday-Thursday 6:00 am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on 703-308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-5408 for regular communications and 703-305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Michael Barr
Primary Examiner
Art Unit 1762

MB
June 20, 2001